

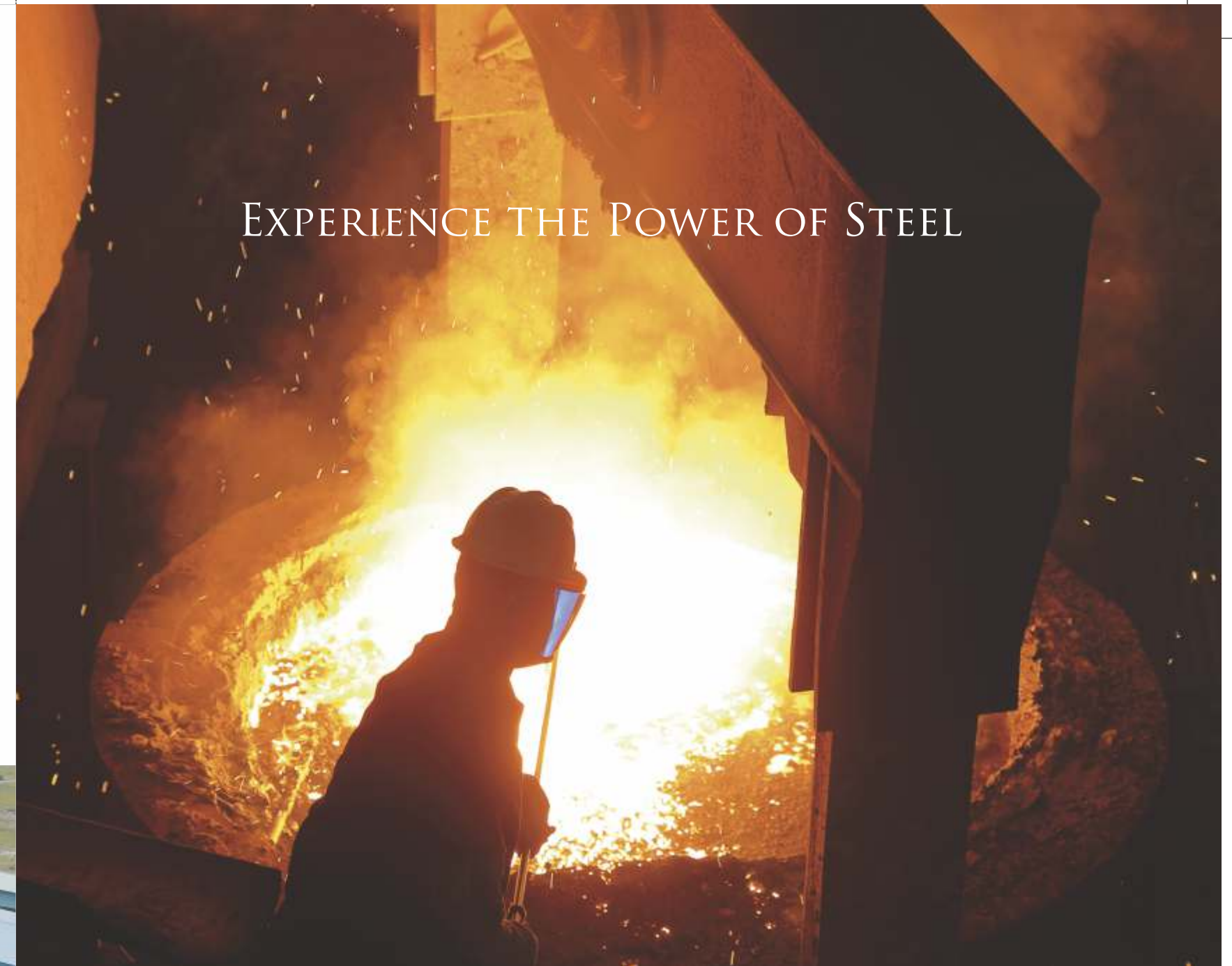
METAROLL 500 TMX ADVANTAGES

PROPERTIES	WHAT YOU GET
Bendability	The unique structure of rebars makes bending of bars easier and boosts the pace of work at the construction sites.
Uniform Rib Pattern	Parallel ribs are engraved on the rebar through CNC machines which create a long-lasting bond between two otherwise dissimilar materials-concrete and steel.
Corrosion Resistance	Controlled water-cooling prevents the formation of coarse carbides, the main cause for steel bar corrosion. Precision machining of rib pattern also eliminates torsional residual stress. Together, this creates superior corrosion resistant capabilities and enhances the lifecycle of the bars.
Weldability	Metaroll 500D bars have a carbon content of less than 0.25%. As a result, no pre-heating is required and wastage due to welding can be reduced considerably.
Earthquake Resistance	Tests have conclusively revealed equivalent energy dissipation during repeated stress cycles. This property facilitates minimum damage to the structure and can minimize casualties caused due to earthquakes..
Fire Resistance	The high thermal stability of Metaroll 500D rebars and the presence of tempered Martensitic- ing on the outer surface imparts higher capacity to retain strength at elevated temperatures of 400 600°C.



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Leading Steel Manufacturers



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Cement and Steel are the foundation of every construction. Both complement each other and deserve the highest quality. But it's been often seen that people tend to neglect the quality of steel as compared to choosing the right quality of cement. As a result of sub-standard steel still, dot the concrete landscape in our cities. Did you know that developed countries stopped using low-grade steel over 30 - 40 years ago?

At Metaroll Steel, we strongly desire to see Indians enjoy the same benefits that are available to citizens of the developed world. A reason why we have developed a highly advanced and globally trusted grade of steel to secure your most prized asset – your home.



Metaroll 500 TMX bars are backed by years of research and performance. Thermex technology by HSE, GERMANY, preferred globally, has been upgraded by many levels at our research lab to produce steel bars that ensure superior strength and flexibility without any increase in the cost.

Metaroll Steel manufactures and stocks rebars of various sizes. We are committed to supplying what our customers need when they need it. Metaroll steel has introduced a 500 grade where

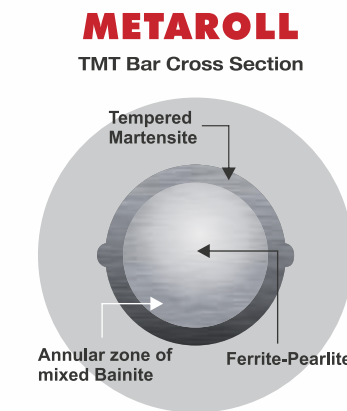
the combined level of Sulphur and Phosphorus is restricted to the maximum of 0.075% to comply with the latest BIS specifications.

Lower levels of S & P can be achieved only through advanced steel making technology. Specifications of BIS, are almost impossible to be achieved through normal scrap & induction furnace route. At Metaroll Steel due to state-of-the-art making facilities as well as the stringent quality control at every step of manufacturing.



Why is METAROLL 500 TMX perfect for your construction?

- . Better and uniform tensile strength
- . Uniform weight
- . Greater flexibility
- . Better earthquake resistance
- . Better surface bonding with cement
- . Enhanced fire resisting properties
- . Increase in savings by 15 to 20 %



Chemical Properties

Element (%max)	IS 1786:2008		Metaroll 500
	Grade Fe 415	Grade Fe 500	
Carbon	0.30	0.30	0.16-0.25
Sulphur	0.060	0.055	0.05
Phosphorus (P)	0.060	0.055	0.05
S & P	0.11	0.105	0.1
Manganese			0.6

Mechanical Properties

Properties	IS 1786:2008		Metaroll 500
	Grade Fe 415	Grade Fe 500	
Yield Strength/ 0.2% Proof Strength (Min., N/mm ²)	415	500	520-565
UTS, Ultimate Tensile Strength (Min., N/mm ²)	485	545	630-730
% Elongation	14.5	12	16-25
UTS/YS Ratio	1.10	1.08	1.15-1.25



Weight Tolerance

Size of Bar (mm)	Cross-Sectional area (mm ²)	Weight per Meter (Kg/m) as per IS 1786-2008			Metaroll 500
		I.S. Lower Limit	I.S. Standard Limit	I.S. Upper Limit	
8	50.3	0.367	0.395	0.423	0.380-0.405
10	78.6	0.574	0.617	0.660	0.580-0.620
12	113.1	0.844	0.888	0.932	0.850-0.900
16	201.2	1.501	1.580	1.659	1.520-1.600
20	314.3	2.396	2.470	2.544	2.421-2.519
25	491.1	3.735	3.850	3.966	3.773-3.927
28	616.0	4.685	4.830	4.975	4.782-4.878
32	804.6	6.121	6.310	6.499	6.247-6.373

